AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 6, line 3 and ending on page 6, line 8 with the following amended paragraph:

The present invention has been achieved in consideration of the above problems, and accordingly has an object to provide a method of generating check matrixes for LDPC codes having satisfactory performance capable of easily searching a definite and characteristic stabilized check matrix for LDPC codes corresponding to an ~~optional~~ optimal ensemble, and a check matrix generating apparatus.

Please replace the paragraph beginning on page 13, line 11 and ending on page 13, line 19 with the following amended paragraph:

A problem is found in the fifth literature that a check matrix derived from the maximum of the "rate (coding rate)" is flux, and the rate fixed in design as a specification varies. In addition, in the fifth literature, the derivation of the degree distribution associated with variable nodes and the derivation of the degree distribution associated with check nodes are iteratively executes over certain times. Therefore, a problem arises that it takes time to some extent for searching. Further, a problem arises that the check matrix does not easily apply to an ~~optional~~ optimal ensemble, an ~~optional~~ optimal code length, and an ~~optional~~ optimal coding rate.

Please replace the paragraph beginning on page 13, line 20 and ending on page 14, line 1 with the following amended paragraph:

In the present embodiment, a method of easily searching in a short time a definite and characteristic-stabilized check matrix for "irregular-LDPC codes", which corresponds to an ~~optional~~ optimal ensemble, and ~~optional~~ optimal code length, and an ~~optional~~ optimal coding rate, is explained (see Fig. 1). Specifically, the check matrix for "irregular-LDPC codes" is generated by using a basic matrix described later (definition: "row and column weights are constant", and "number of cycles is equal to or more than 6").